

REMARKS

Claims 1 and 3-20 are pending in this application, claims 12-17 having been withdrawn from consideration. By this Amendment, claims 1, 5-8, 18 and 20 are amended and claim 2 is canceled without prejudice to or disclaimer of the subject matter set forth therein. Support for the amendments to claims 1, 5-8, 18 and 20 can be found in the specification as originally filed, for example, at page 34, line 7 - page 36, line 10; and in original claims 1, 2, 5-8, 18 and 20. No new matter is added by these amendments.

In addition, the specification is amended to correct various informalities therein. No new matter is added by the amendments to the specification.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Chapman in the July 6 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. Restriction Requirement

A telephone requirement for restriction was made in connection with the above-identified patent application on April 7, 2005. In response to that telephone requirement, a provisional election was made, on April 11, 2005, to prosecute Group I, claims 1-11 and 18-20. Said provisional election was made with traverse.

Applicants respectfully submit that the election of Group I, claims 1-11 and 18-20 was affirmed by the Confirmation of Telephone Election filed on April 11, 2005.

It is also respectfully submitted that the subject matter of all claims is sufficiently related that a thorough search for the subject matter of any one Group of claims would encompass a search for the subject matter of the remaining claims. Thus, it is respectfully submitted that the search and examination of the entire application could be made without serious burden. See MPEP §803 in which it is stated that "if the search and examination of an entire application can be made without serious burden, the examiner must examine it on the

merits, even though it includes claims to independent or distinct inventions" (emphasis added). It is respectfully submitted that this policy should apply in the present application in order to avoid unnecessary delay and expense to Applicants and duplicative examination by the Patent Office.

Applicants further respectfully submit that, because claims 1-11 and 18-20 are in condition for allowance for the reasons set forth below, claims 12-17 should be rejoined and considered on the merits at this time.

Thus, withdrawal of the Restriction Requirement and rejoinder of claims 12-17 are respectfully requested.

II. Objections to the Specification

The Office Action objects to the specification as containing informalities. In particular, the Office Action notes that the word "individual" is misspelled at page 16, line 11. Applicants respectfully submit that the specification has been reviewed for informalities, and that the amendments to the specification merely correct any informalities therein. No new matter is added by these amendments. Accordingly, withdrawal of the objection is respectfully requested.

III. Claim Rejections Under 35 U.S.C. §112

A. First Paragraph

The Office Action rejects claims 1, 18 and 20 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. In particular, the Office Action asserts that the concepts of a "variation in the number average particle diameter" and a "variation in a circularity of the coloring particles" are not sufficiently described. Applicants respectfully disagree.

The specification fully describes the term "variation in the number average particle diameter." *See* Specification, page 16, line 1 - page 17, line 2. In particular, the variation in

average particle diameter is defined as "a standard variance expressed as a percentage relative to an average obtained by statistically processing measured values of the number average particle diameter D_{TN} measured for a certain number of coloring particles." *See* Specification, page 16, line 22 - page 17, line 1. That is, the variation in average particle diameter is 100 times the standard variance of the measured particle diameters, divided by the average particle diameter.

The specification similarly fully describes the term "variation in a circularity." *See* Specification, page 17, line 22 - page 18, line 18. In particular, the variation in circularity is defined as "a standard variance relative to an average is expressed as a percentage." *See* Specification, page 18, lines 10-13. That is, the variation in circularity is 100 times the standard variance of the circularity, divided by the average circularity. Circularity is defined as the "circle-equivalent diameter circumferential length/circumferential length," or $2(\text{projected particle area})^{1/2}\pi/(\text{circumferential particle length})$.

The measured values used for the calculations of variation in number average particle diameter, circularity, and variation in circularity can be obtained using an image analyzer and processing at least 5000 particles. *See* Specification, page 18, lines 19-25. Such measurements and processing to obtain the calculated values are further described in the specification at page 59, line 20 - page 62, line 3.

Because the specification fully describes variation in number average particle diameter, circularity, and variation in circularity and how these values are obtained, Applicants respectfully submit that claims 1, 18 and 20 are fully described in the specification.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Second Paragraph

The Office Action rejects claims 1, 18 and 20 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to point out and distinctly claim the subject matter that Applicants regard as the invention. In particular, the Office Action asserts that the terms and values for a "variation in the number average particle diameter" and a "variation in a circularity of the coloring particles" are unclear and indefinite. Applicants respectfully disagree.

As set forth above, the specification fully describes the terms "variation in the number average particle diameter" and "variation in a circularity." In addition, the manner in which these values are obtained is also fully described. Applicants respectfully submit that, armed with the descriptions in the specification as discussed above, one of ordinary skill in the art would understand and be able to determine values for the terms "variation in the number average particle diameter" and "variation in a circularity," as they relate to coloring or toner particles. Thus, Applicants respectfully submit that claims 1, 18 and 20 are not indefinite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

IV. Claim Rejections Under 35 U.S.C. §103

The Office Action rejects claims 1-11 and 18-20 under 35 U.S.C. §103(a) over U.S. Patent No. 6,569,589 to Inaba et al., U.S. Patent No. 6,528,224 to Ohno et al., Japanese Patent No. JP 11-344829 to Ono et al., and Japanese Patent No. JP 11-295931 to Yasuno et al. By this Amendment, claim 2 has been canceled. Applicants respectfully traverse this rejection with respect to claims 1, 3-11 and 18-20.

Independent claim 1 sets forth, in pertinent part, a "toner for electrostatic latent image development comprising: coloring particles containing at least a binding resin, a colorant and a release agent; and an external additive, wherein a variation in a number average particle

diameter of the coloring particles is 25 or less, an average circularity of the coloring particles is 0.975 or more, and a variation in a circularity of the coloring particles is 2.5 or less; and wherein as the external additive, at least monodisperse spherical particle having a true specific gravity in a range of 1.0 to 1.9 are used, and a ratio of a number average particle diameter D_{TN} of the coloring particles and a number average particle diameter D_{add} of the monodisperse spherical particles (D_{TN}/D_{add}) is in a range of $25 \leq D_{TN}/D_{add} \leq 80$."

Independent claim 18 is directed to an electrostatic latent image developer containing a toner including similarly set forth coloring particles; independent claim 20 is directed to an image forming method using an electrostatic latent image developer containing a toner that includes similarly set forth coloring particles. Claims 3-11 depend from and incorporate all of the limitations of claim 1, and claim 19 depends from and incorporates all of the limitations of claim 18.

The Office Action takes the position that the pending claims would have been obvious over each of the cited references because each reference teaches toners as well as the importance of size and circularity. Applicants respectfully disagree.

Each of the cited references teaches toner particles having a specific average circularity and a standard deviation in circularity. In particular, Inaba teaches toner particles having an average circularity of 0.920-0.995 and a standard deviation of circularity of less than 0.15; Ohno and Ono each teach toner particles having an average circularity of 0.970-0.995 and a standard deviation no greater than 0.030; and Yasuno teaches toner particles having an average circularity no less than 0.95 and a standard deviation of no greater than 0.04. *See Inaba*, co. 23, line 64 - col. 24, line 10; *Ohno*, Abstract, col. 5, lines 28-37 and col. 10, lines 16-45; *Ono*, Abstract; *Yasuno*, Abstract. In addition, Inaba, Ohno and Ono teach number average particle diameters for their toner particles of 2-10 μm , 2-6 μm , and 2-6 μm , respectively. *See Inaba*, col. 24, lines 11-14; *Ohno*, Abstract, col. 5, lines 28-43;

Ono, Abstract. Ohno and Ono further teach standard deviations of their number average particle diameters of no greater than 2.6 μm . *See* Ohno, Abstract, col. 4, lines 28-37 and lines 51-58; Ono, Abstract.

However, none of the references discloses or suggests toners that include external additives meeting the requirements set forth in claim 1. *See generally*, Inaba; Ohno; Ono; Yasuno. Specifically, none of the references teach or suggest an external additive that includes "monodisperse spherical particle[s] having a true specific gravity in a range of 1.0 to 1.9 are used, and a ratio of a number average particle diameter D_{TN} of the coloring particles and a number average particle diameter D_{add} of the monodisperse spherical particles ($D_{\text{TN}}/D_{\text{add}}$) is in a range of $25 \leq D_{\text{TN}}/D_{\text{add}} \leq 80$." *Id.*

The references also do not teach or suggest the benefits that may be obtained by toners including such additives. As described in the specification, the incorporation of monodisperse spherical particle additives having a true specific gravity in the range of 1.0 to 1.9 allows the toner to achieve high transfer efficiency. *See* Specification, page 34, lines 9-17.

Further, incorporating into a toner monodisperse spherical particles as external additives that have a ratio of the number average particle diameters of the coloring particles to the number average particle diameters of the additive particles also provides significant benefits. Such toners can achieve a decreased contact area with the electrostatic latent image supporting member, reduced electrostatic adhering forces and enhanced transfer efficiency. *See* Specification, page 34, line 25 - page 35, line 10. That is, such toners have superior image quality and can be cleaned more efficiently than toners without such additives. None of these benefits are taught or suggested by the cited references.

Because none of the cited references teach or suggest toners including, as an external additive, "at least monodisperse spherical particle having a true specific gravity in a range of

1.0 to 1.9 are used, and a ratio of a number average particle diameter D_{TN} of the coloring particles and a number average particle diameter D_{add} of the monodisperse spherical particles (D_{TN}/D_{add}) is in a range of $25 \leq D_{TN}/D_{add} \leq 80$," as set forth in claims 1, 18 and 20, Applicants respectfully submit that independent claims 1, 18 and 20, and their dependent claims, are patentable over Inaba, Ohno, Ono and Yasuno. Accordingly, reconsideration and withdrawal of these rejections are respectfully requested.

V. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Julie M. Seaman
Registration No. 51,156

JAO:JMS/jms

Attachments:

Substitute Specification - Marked-up Version
Substitute Specification - Clean Version

Date: July 12, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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